

WHAT IS CLAIMED IS:

1. A field emission display device, comprising:

a substrate;

an anode electrode formed on the substrate;

5 an insulation layer disposed on the substrate covering the anode electrodes except a pixel area formed on the anode electrode;

a phosphor layer disposed on the pixel area in contact with the anode electrode;

a cathode electrode formed on the insulation layer between the phosphor layers;

and

a carbon nanotube emitter disposed on the cathode electrode for emitting electrons toward at least one of the phosphor layers.

2. The field emission display device of claim 1, wherein the carbon nanotube emitter is disposed at least one edge of the cathode electrode.

3. The field emission display device of claim 1, wherein the anode electrode and the cathode electrode have a structure of plural line patterns and intersect each other at a right angle.

4. The field emission display device of claim 3, wherein the carbon nanotube emitter corresponding each phosphor layer is arranged at the same intervals as the phosphor layers covering an edge of the cathode electrode.

20 5. The field emission display device of claim 3, wherein the carbon nanotube emitter is disposed in a line pattern covering an edge of the cathode

electrode.

6. The field emission display device of claim 3, wherein the carbon nanotube emitter corresponding each phosphor layer is arranged at the same intervals as the phosphor layers covering both edges of the cathode electrode.

5 7. The field emission display device of claim 3, wherein the carbon nanotube emitter is disposed in a line pattern covering both edges of the cathode electrode.

8. The field emission display device of claim 1, further includes gate electrode disposed within the insulation layer to be arranged between the anode electrode and the cathode electrode.

9. The field emission display device of claim 1, further includes a transparent front substrate coupled with the substrate by a sealant while a space between the substrate and the front substrate is kept as vacuum.

10. The field emission display device of claim 9, wherein the front substrate
15 has a transparent electrode on a surface thereof facing the substrate.

11. A field emission display device, comprising:

a substrate;

an anode electrode formed on the substrate to have a structure of plural line
patterns;

20 an insulation layer disposed on the substrate covering the anode electrode
except a pixel area formed on the anode electrode;

a phosphor layer disposed on the pixel area in contact with the anode electrode;
a cathode electrode formed on the insulation layer and having a structure of plural line patterns to intersect with the anode electrode at a right angle; and
a carbon nanotube emitter covering at least one edge of the cathode electrode
5 for emitting electrons toward at least one of the phosphor layers.

12. A field emission display device, comprising:

a substrate;

an anode electrode formed on the substrate;

an insulation layer disposed on the anode electrode except a pixel area formed
10 on the anode electrode;

a gate electrode disposed within the insulation layer except the pixel area;

a phosphor layer disposed on the pixel area in contact with the anode electrode;

a cathode electrodes formed on the insulation layer between the phosphor
15 layers; and

a carbon nanotube emitter disposed on the cathode covering at least one edge
of the cathode electrode for emitting electrons.

13. The field emission display of claim 12, wherein the gate electrode and
the cathode electrode have a structure of plural line patterns to intersect each other at a
right angle.

20 14. The field emission display device of claim 12, further comprising a
transparent front substrate coupled with the substrate by a sealant while a space
between the substrate and the front substrate is kept as vacuum.

15. The field emission display device of claim 14, wherein the front substrate has a transparent electrode on a surface facing the substrate.